



100

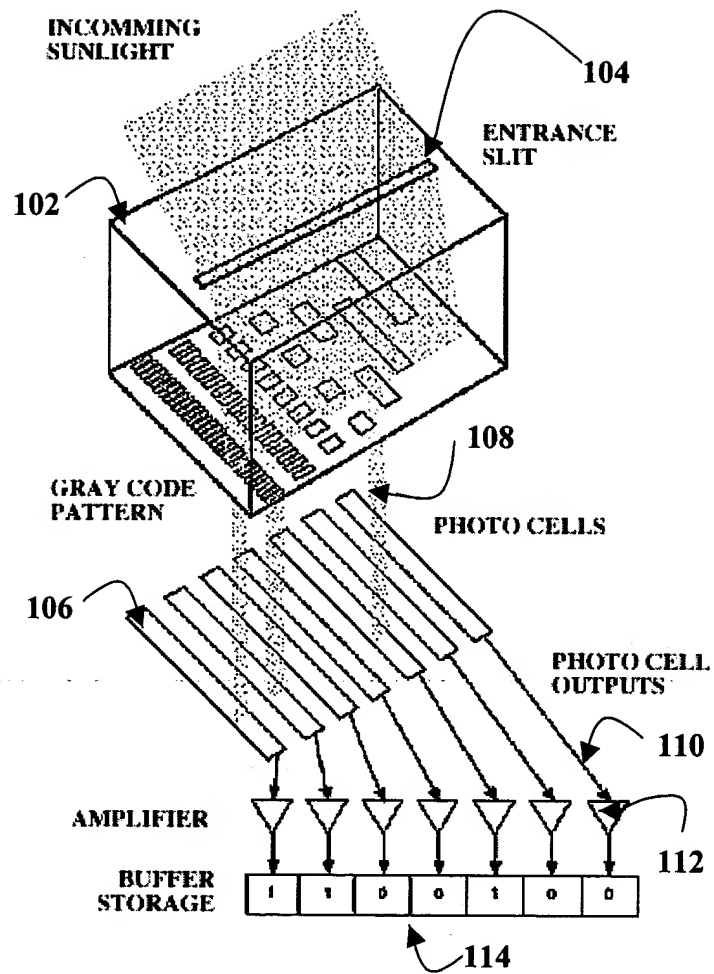


FIG. 1
(PRIOR ART)

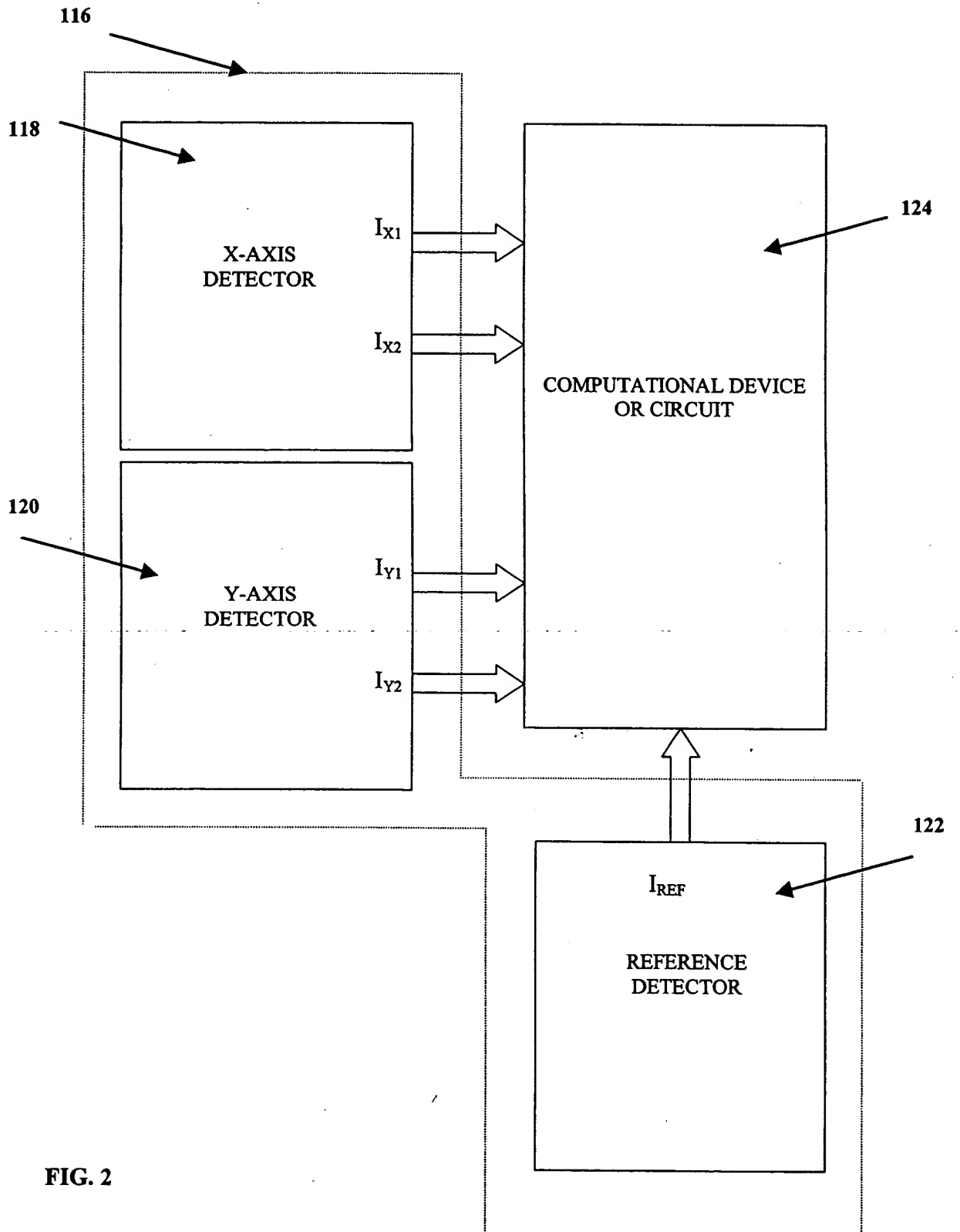


FIG. 2

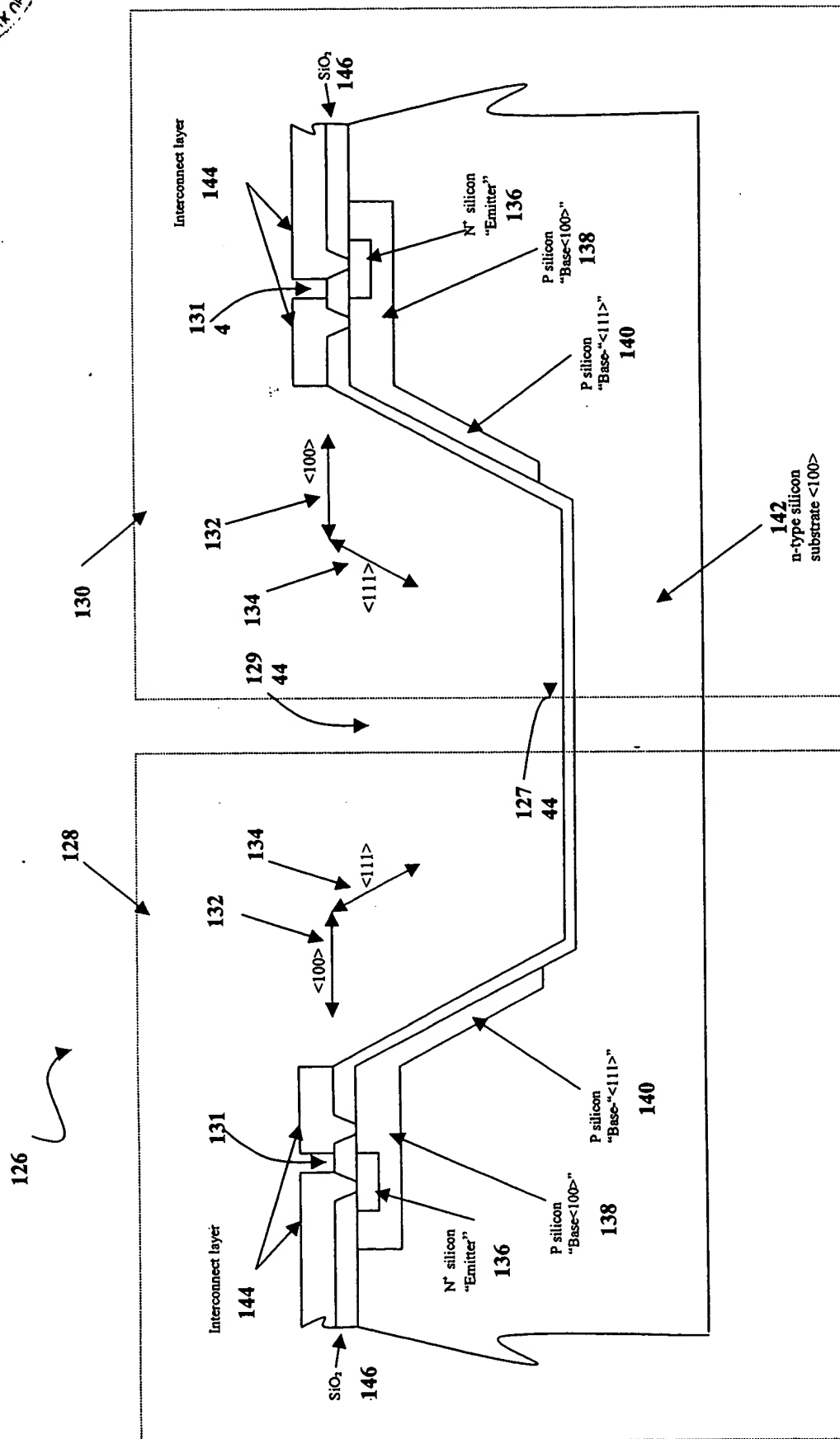


FIG. 3

148

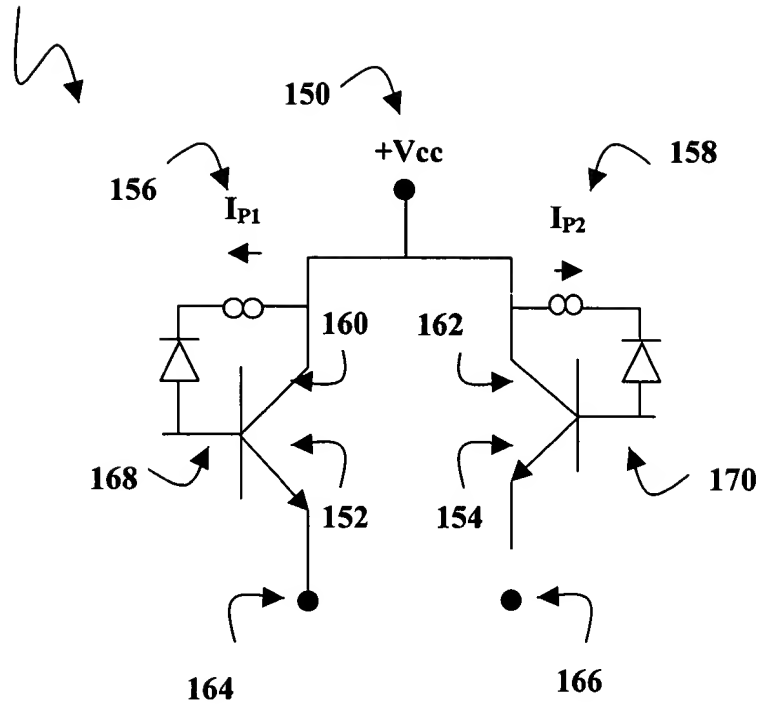


FIG. 4

172

174

176

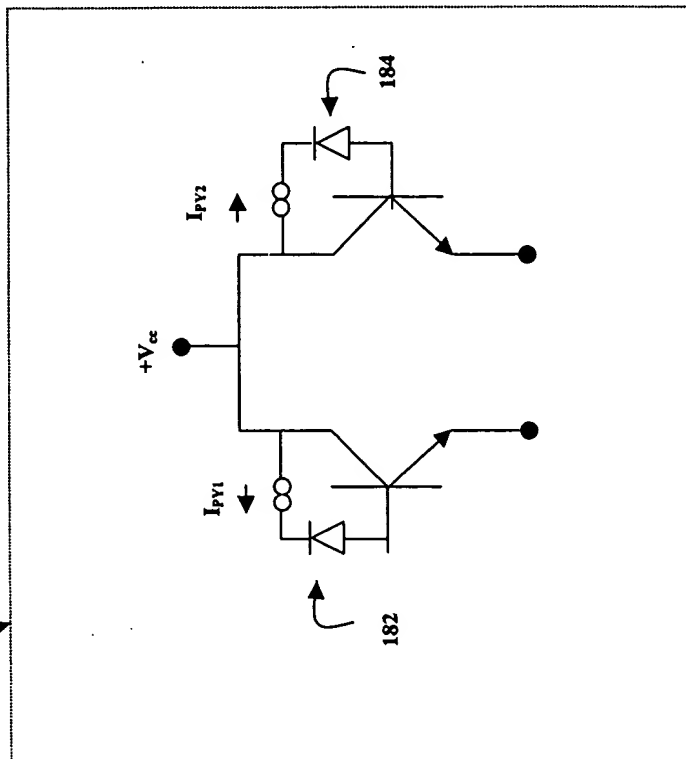
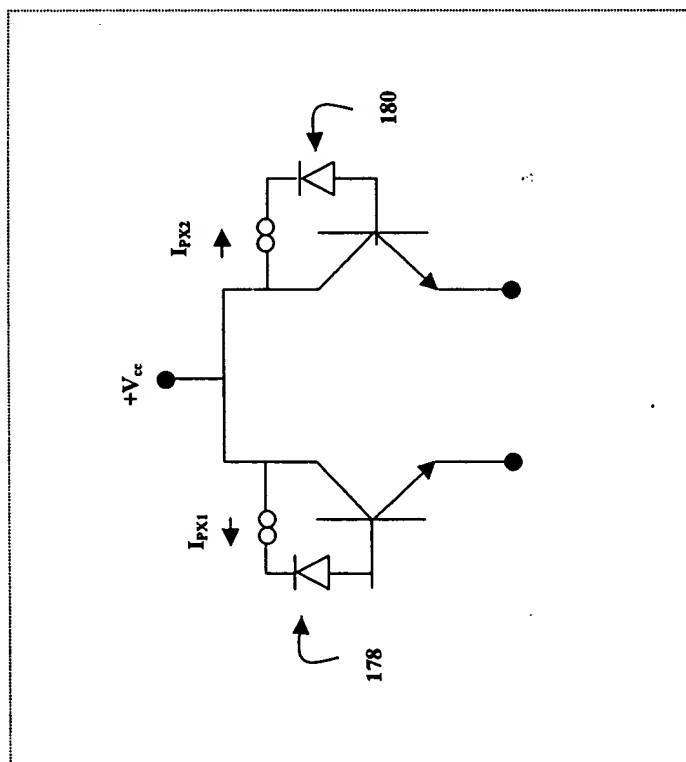


FIG. 5

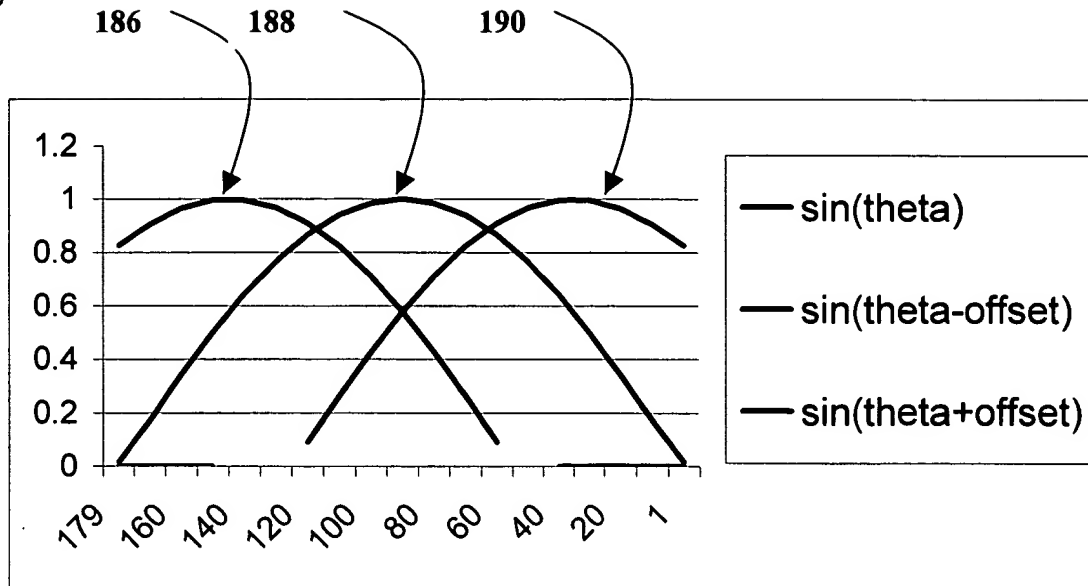


FIG. 6A

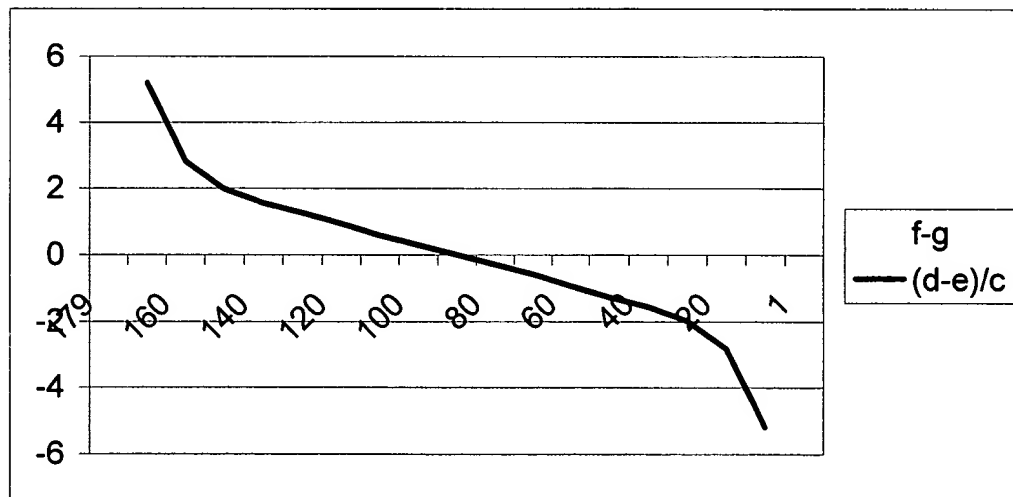


FIG. 6B



192

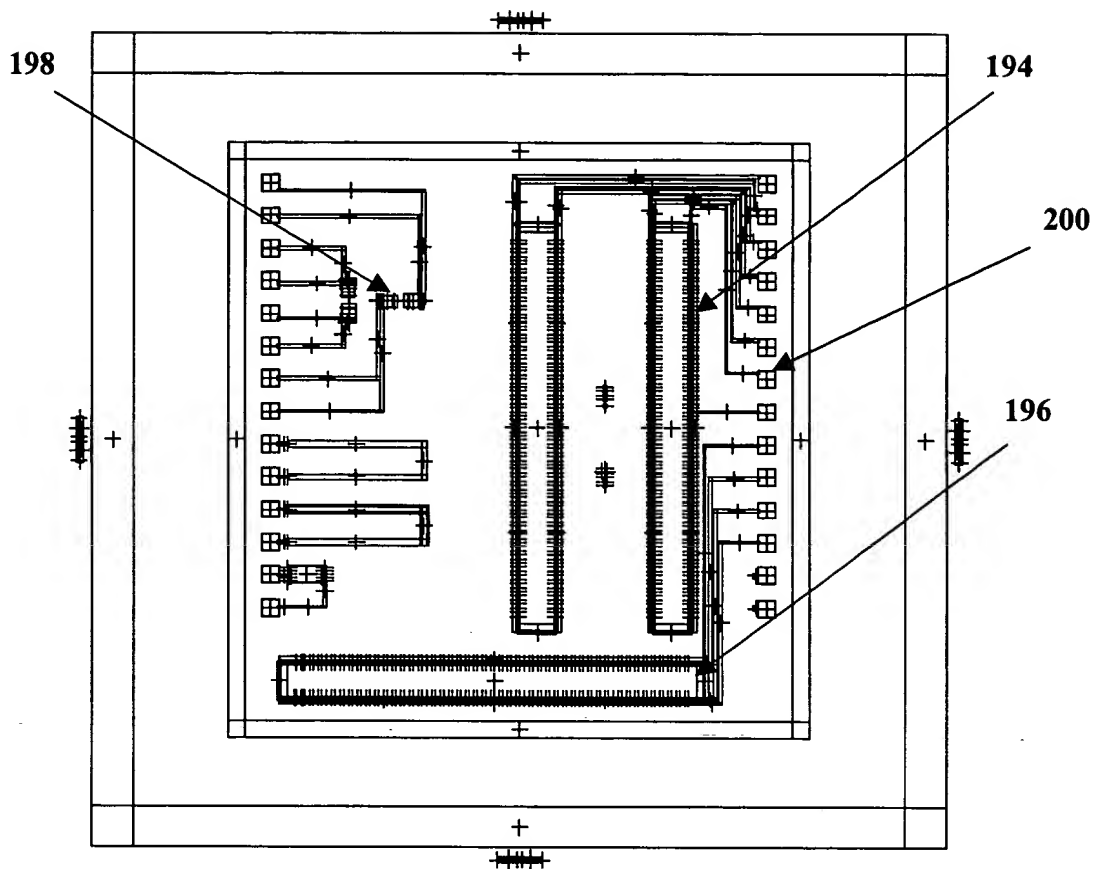


FIG. 7

202



Mask layer #2-1st silicon
etch, 2nd boron diffusion, 2nd
silicon etch

204

N⁺ diffusion terminates P base <111>
Mask layer #3

206

P base <100>, mask
layer #1

208

Contacts to P base <100>, mask
layer #4

210

N⁺ diffusion for
emitter-mask layer #3

212

Emitter contact-
mask layer #4

214

Metallization not shown. Contacts to N
substrate/collector are made with
additional contacts near bond pads.

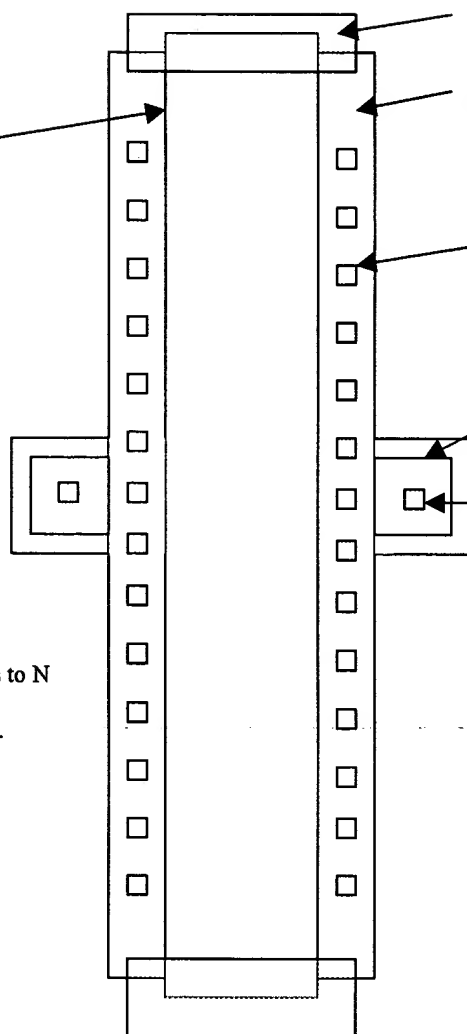


FIG. 8

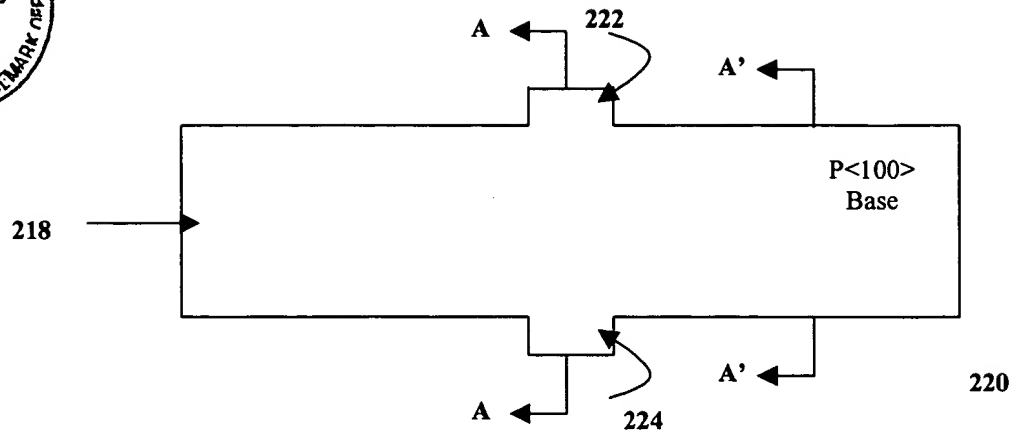


FIG. 9A

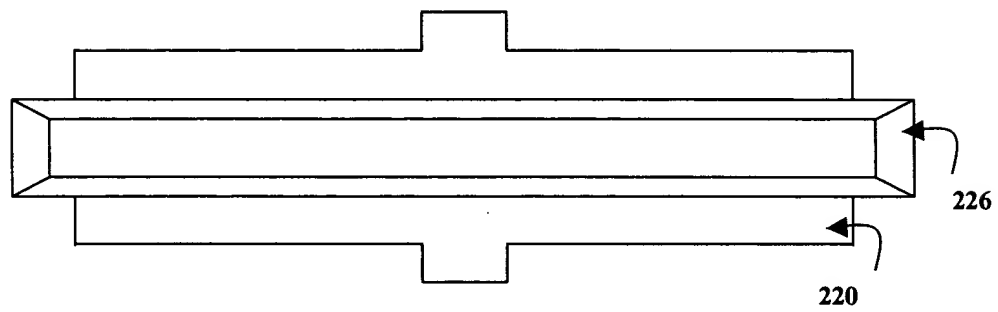


FIG. 9B

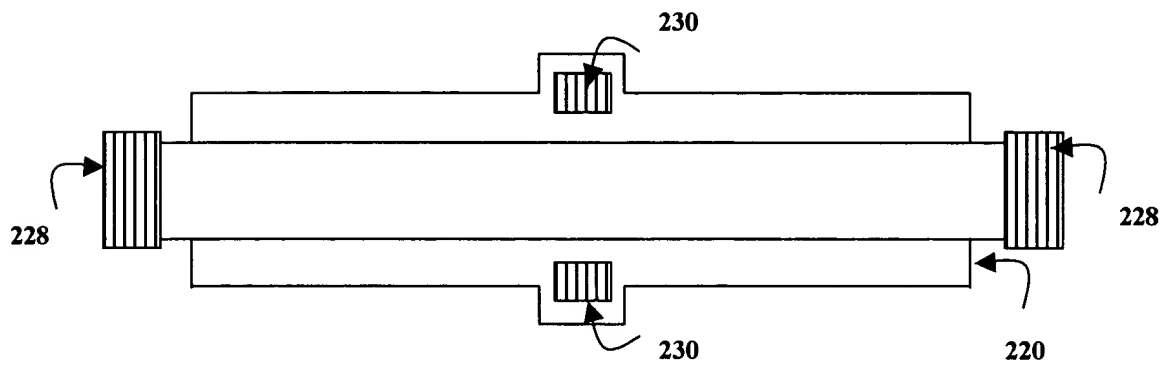


FIG. 9C

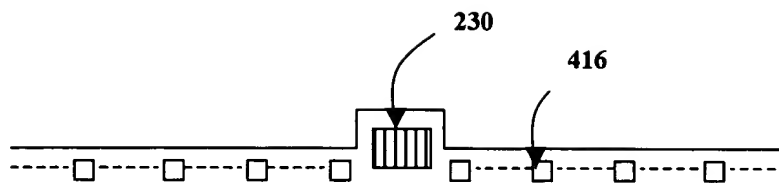


FIG. 9D

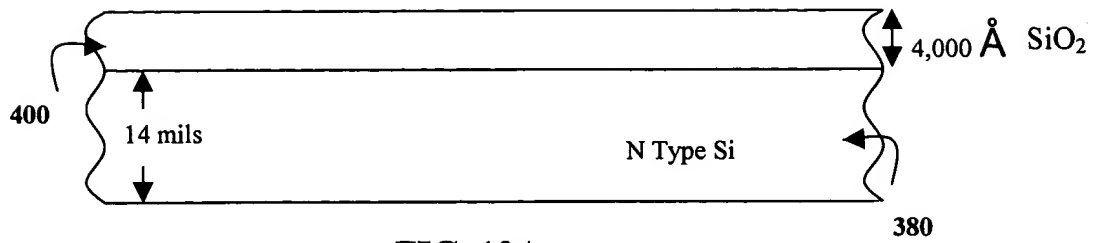


FIG. 10A

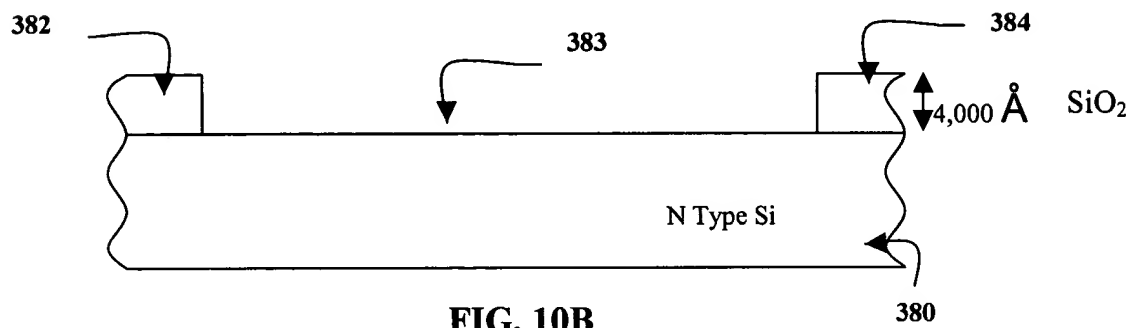


FIG. 10B

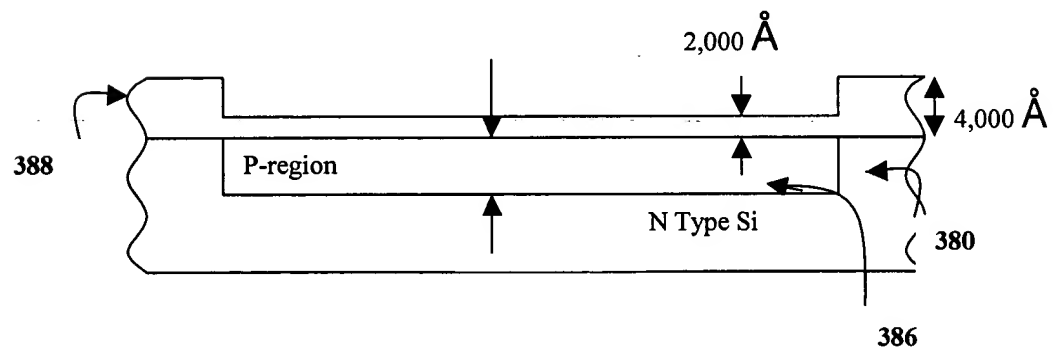


FIG. 10C

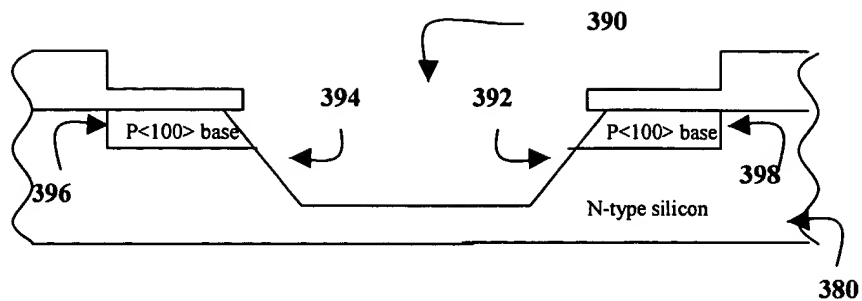


FIG. 10E

390

394

392

230

402

404

8-10 μ

1-2 μ

FIG. 10F

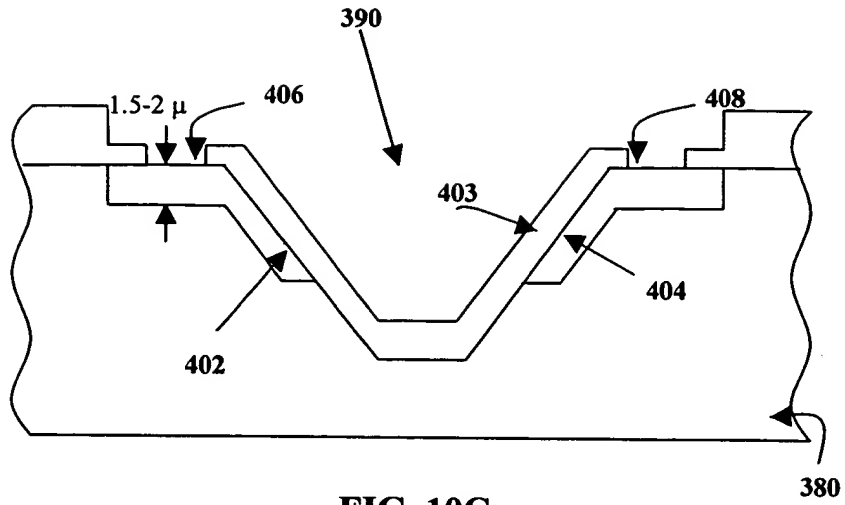


FIG. 10G

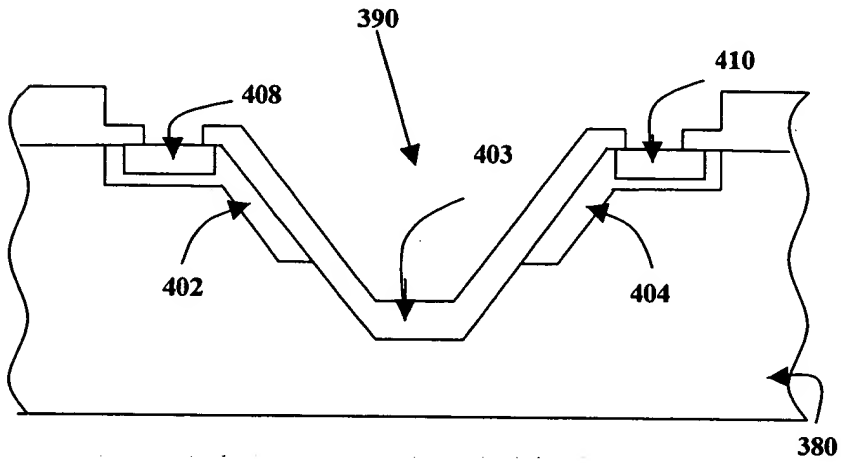


FIG. 10H

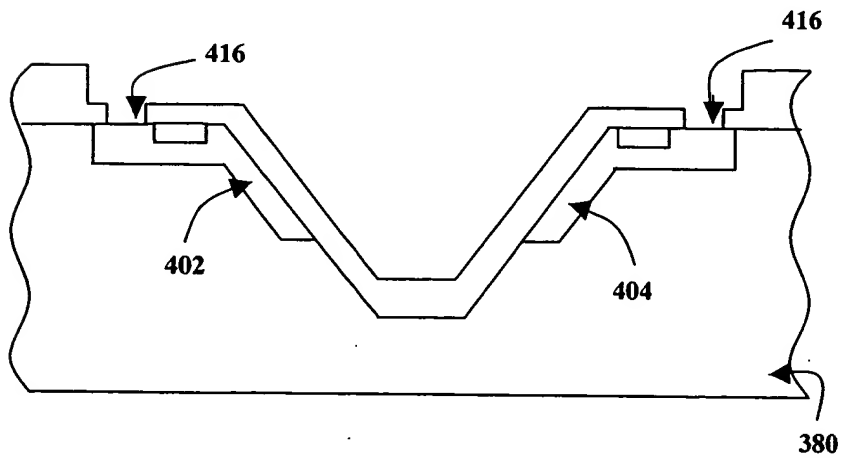


FIG. 10I

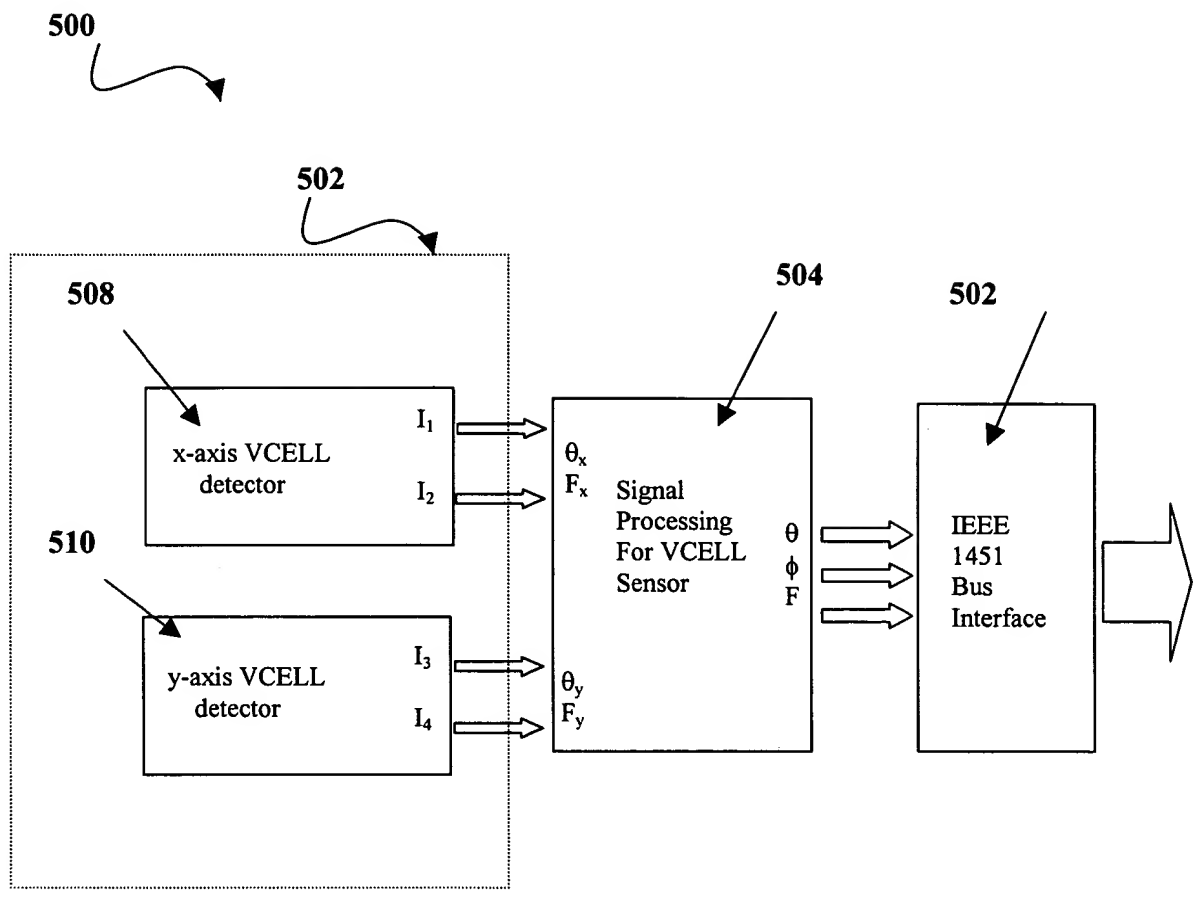


FIG. 11